REMARKS

This Amendment and Response is filed in reply to the Office action dated August 2, 2006. This Amendment and Response amends claims 1, 12, 22-28 and 36-37, and cancels claim 29. Accordingly, after entry of this Amendment and Response, claims 1-28 and 30-42 will be pending.

I. Specification Objection

The title to the invention is objected to as not being descriptive. In response the title has been amended to be clearly indicative of the invention to which the claims are directed.

II. Abstract Objection

The abstract is objected to because it includes parenthetical drawing information. In response, the abstract has been amended to delete the parenthetical information.

III. Claim Objections

Claims 1, 12 and 37 are objected to because the preamble must state the intended use or purpose of the invention. In response each of claims 1, 12 and 37 has been amended to include the phrase "for predicting the timing response of a circuit path" in the preamble to specify the intended use or purpose of the claimed invention.

Claims 23-29 are objected to under 37 C.F.R. § 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. In response, claims 22-28 have been amended to place the claims in proper form by referring to and further limiting a method rather than a product. Claim 29 has been canceled.

Claims 29 and 36 are objected to because of certain informalities. As set forth above, claim 29 is canceled. Claim 36 is objected to for the use of an alternative form of claiming, which is indicated as requiring replacement of "or" in line 4 with "and." Further, the objection indicates that the reference to "a propagated signal" must be deleted because carrier waves are not considered patentable under the USPTO Interim Guidelines for 35 U.S.C. § 101. In response, claim 36 has been amended as suggested by the Examiner.

All claim objections are addressed and the claims are now in proper form.

IV. Claim Rejections Under 35 U.S.C. § 112

Claims 22-29 are rejected under 35 U.S.C. § 112, second paragraph. Claim 22 is rejected because it recites a method of making a computer readable medium but the method lacks any method steps to make the computer readable medium. Further, claims 22-29 are rejected because the claimed invention does not make, manufacture or otherwise construct

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computer readable media. In response, claims 22-28 have been amended to recite method claims for generating a circuit design which particularly point out and distinctly claim the subject matter of the invention. Claim 29 has been canceled.

V. Claim Rejections Under 35 U.S.C. § 103

A. Rejection of Claims 1-2, 6-7, 22-23, 28-29, 37-38, and 41-42 Under 35 U.S.C. § 103

Claims 1-2, 6-7, 22-23, 28-29, 37-38 and 41-42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,405,352 to Spencer et al. (hereinafter "Spencer"). This rejection is respectfully traversed because a prima facie case of obviousness has not been established.

A proper prima facie obviousness rejection requires 1) a suggestion or motivation to modify the prior art reference or combine the reference teachings; 2) a reasonable expectation of success; and 3) that the combined references teach or suggest all of the claim limitations. *See* MPEP § 2143. It is respectfully submitted that the cited reference does not teach or suggest all of the claim limitations of the present invention.

Initially, independent claims 1, 22 and 37 are addressed. The invention set forth in the independent claims is directed to the problem of correcting coarse timing predictions for a large number of circuit paths, amongst other problems. The problem is overcome by measuring the same circuit path using two different timing models. One model may be fast but less accurate and the other model may be more precise but slower, for example. The variation in the timing responses of the two models is used to generate a correction factor that is applied to correct the timing measurements of the circuit paths provided by the first model.

More specifically, independent claims 1, 22 and 37 include the limitations "obtaining a first estimated timing response of a first circuit path using a first timing model" and "obtaining a second estimated timing response of a first circuit path using a second timing model." A correction factor is then generated based on a variation between the two timing responses. Spencer does not teach or suggest making two different timing measurements on the same circuit path.

Spencer at most discloses generating timing responses for circuit paths that have undergone wire-only changes from the original base chip model. That is, Spencer does not measure the same circuit path using two different timing models. Spencer measures circuit paths that have changed from a base design using the same timing model that measured the timing responses of the base chip model circuit paths. Thus, Spencer is not concerned with correcting the timing responses of circuit paths produced by a coarse timing model. Rather, Spencer identifies circuit paths that have undergone wire-only changes between

iterations of a chip design and measures the timing responses of those circuit paths which are used to update the base timing model to achieve a faster chip design process.

For the above reasons, it is respectfully submitted that independent claims 1, 22 and 37 are patentable over Spencer and such indication is respectfully requested. The remaining rejected claims 2, 6-7, 23, 28-29, 38 and 41-42 all depend, directly or indirectly, from one of independent claims 1, 22 and 37. Accordingly, these dependent claims are themselves patentable over Spencer for at least the reasons set forth above and such indication is respectfully requested. This statement is made without reference to or waiving the independent bases of patentability within each dependent claim.

B. Rejection of Claims 3-5, 8-9, 24-27 and 39-40 Under 35 U.S.C. § 103(a)

Claims 3-5, 8-9, 24-27 and 39-40 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Spencer in view of U.S. Patent No. 6,834,379 to Kidd et al. (hereinafter "Kidd"). This rejection is respectfully traversed for the following reasons.

Claims 3-5, 8-9, 24-27 and 39-40 all depend from independent claims 1, 22 and 37. As previously discussed above, Spencer does not teach all the limitations of the independent claims from which claims 3-5, 8-9, 24-27 and 39-40 depend. Further, Kidd does not teach or suggest the limitations "obtaining a first estimated timing response of a first circuit path using a first timing model" and "obtaining a second estimated timing response of a first circuit path using a second timing model" required by independent claims 1, 22 and 37. Although Kidd teaches the use of a path detailer to merge timing reports to provide more detailed information about a circuit path, Kidd does not teach the use of two different timing models to measure the same circuit path to create a correction factor.

Thus, it is respectfully submitted that independent claims 1, 22 and 37 are patentable over Spencer in view of Kidd and such indication is respectfully requested. The remaining rejected claims 3-5, 8-9, 24-27 and 39-40 all depend, either directly or indirectly, from one of the independent claims 1, 22 and 37. Accordingly, dependent claims 3-5, 8-9, 24-27 and 39-40 are themselves patentable over Spencer in view of Kidd for the same reasons and such indication is respectfully requested.

C. Rejection of Claims 12-15, 18-19, 30-33 and 36 Under 35 U.S.C. § 103(a)

Claims 12-15, 18-19, 30-33 and 36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Spencer in view of Kidd. This rejection is respectfully traversed for the following reasons.

Initially, independent claims 12 and 30 are addressed. Independent claim 12 includes the limitations "obtaining coarse estimated timing responses...using a first timing model having a first accuracy", "obtaining refined estimated timing responses...using a second timing model having a second accuracy greater than the first accuracy" and

"generating a correction factor based on the coarse estimated timing response of the one or more selected circuit paths and the refined timing estimates of the one or more selected paths." Independent claim 30 includes similar limitations. As discussed above, Spencer does not teach or suggest measuring a circuit path using two different timing models with different accuracies to generate a correction factor.

Kidd also does not teach or suggest such a limitation. Kidd does disclose a circuit level abstract model that has high level timing information and a constraint debug model that contains detailed timing information for circuit paths. A detailer is used to merge the debug partition level timing reports and circuit level timing reports that form the global timing path of interest to generate a global timing path report. As such, Kidd does not teach or suggest measuring a circuit path using a first timing model and a second timing model to generate a correction factor.

Furthermore, Kidd does not disclose a second timing model having an accuracy greater that the accuracy of the first timing model as required by the independent claims. Kidd discloses a circuit level timing model that abstracts the detailed timing information of a circuit path by consolidating the information. The debug model of Kidd has the detailed timing information for the elements in the path that has been abstracted. That is, Kidd makes use of a debug model to provide timing information for the individual elements that make up an abstract path in the circuit model. It does not disclose that the timing information of one model is more accurate than the timing information of the other model. Thus, Kidd does not teach or suggest the use of two different timing models with different accuracies as required by the independent claims 12 and 30.

Thus, for at least the reasons stated above, it is respectfully submitted that the independent claims 12 and 30 are patentable over Spencer in view of Kidd and such indication is respectfully requested. The remaining rejected claims 13-15, 18-19, 31-33 and 36 all depend, either directly or indirectly, from one of the independent claims 12 and 30. Accordingly, dependent claims 13-15, 18-19, 31-33 and 36 are themselves patentable over Spencer in view of Kidd for the same reasons and such indication is respectfully requested.

VI. Allowable Subject Matter

The Examiner is thanked for the indication that claims 10, 11, 16, 17, 20, 21, 34 and 35 would be allowable if written in independent form, including all the limitations of the base claims and any intervening claims. These claims have not been amended herein to be written in independent form. For the above discussed reasons with regard to independent claims 1, 12, 22, 30 and 37, from which claims 10, 11, 16, 17, 20, 21, 34 and 35 depend, it is believed that all claims are in form for allowance without amendment and such indication is

respectfully requested. Applicant reserves the right to amend claims 10, 11, 16, 17, 20, 21, 34 and 35 in independent form at a later date.

VII. Conclusion

This Amendment is submitted contemporaneously with a petition for a two-month extension of time in accordance with 37 C.F.R. § 1.136(a). Accordingly, please charge Deposit Account No. 04-1415 in the amount of $450.00, for a two-month extension of time fee. The Applicant believes no further fees or petitions are required. However, if any such petitions or fees are necessary, please consider this a request therefor and authorization to charge Deposit Account No. 04-1415 accordingly.

The Applicant thanks the Examiner for his thorough review of the application. The Applicant respectfully submits the present application, as amended, is in condition for allowance and respectfully requests the issuance of a Notice of Allowability as soon as practicable.

If the Examiner should require any additional information or amendment, please contact the undersigned attorney.

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Respectfully submitted,

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